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Hawkeye
Product Proposal for
Gate 0 Approval

HAWKEYE



The Optical SMART Board Project

Optical SMART Board

Project Team

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Product Description

Hawkeye is the code name for a new product family from SMART Technologies Inc. The first Hawkeye product from SMART is anticipated to launch in mid-1999. The basic concept behind Hawkeye is the intelligent capture of whiteboard and greenboard / blackboard information digitally using optical sensors and personal or embedded computers.

The product would involve:

- a camera, mounting hardware and software product that can capture board images using digital camera technology (either manufactured by SMART or commercially produced)
- technology licensed from Xerox that enables the creation of editable bitmap images, the correction of keystone images, color normalization and mosaicing (image stitching)
- software created by SMART that would add a user-friendly interface and enable images to be printed, stored and retrieved simply and easily

Three different concepts of the product have been suggested:

Hawkeye Concept 1

- utilizes a single or multiple fixed camera(s) to capture and store multiple images. The Xerox mosaicing software could be used to stitch these images together if appropriate. These images can be shared either as hardcopy or softcopy through a network or stored on a PC. The system would include a camera, mounting hardware, operating and image-capturing software, and an embedded PC (or PDA) with a LCD display that could be connected to a PC, network and/or a printer.

Hawkeye Concept 2

- utilizes a single (or multiple) fixed image camera capable of capturing board images and storing them as softcopies on a PC. This system would not require an embedded PC or PDA device as it would be designed to be connected to a dedicated PC.

Hawkeye Concept 3

- utilizes a fixed-image camera capable of capturing one board image and producing a hardcopy of that image. This system would be a stand-alone unit that would include a camera, mounting hardware, operating and image capturing software, an embedded PC and a printer.

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User Scenarios

There are three perceived user scenarios for this technology. Generally, these arise from situations in which PC's and/or network connections are available and in which information must be gathered, stored and retrieved.

- **Meeting Room use**
 - ⇒ rooms are used by a wide variety of personnel who require a simple way to capture, store and distribute their meeting notes
 - ⇒ rooms may have large boards or multiple boards on which information should be captured
 - ⇒ information could be easily captured, stored, retrieved and manipulated
 - ⇒ rooms will have a dedicated meeting room PC or, minimally, network connections
 - ⇒ product must be an effective information management solution that requires little or no training
- **Classroom use**
 - ⇒ instructors could make use of a simple, convenient solution to capture notes made during a class or lecture
 - ⇒ rooms may have large boards or multiple boards on which information should be captured
 - ⇒ product could capture and then distribute the notes and information on paper or electronically
 - ⇒ information could be easily captured, stored, retrieved and manipulated
 - ⇒ teachers need a system that could work with their current board set-up (black/green boards or whiteboards) using regular ink, whiteboard markers or even chalk
 - ⇒ rooms will have a dedicated meeting room PC or, minimally, network connections
 - ⇒ product must be an effective information management solution that requires little or no training
- **Individual / cubicle use**
 - ⇒ individuals who need to capture notes in smaller meetings or brainstorming sessions in their cubicles or at their desks
 - ⇒ cubicles or offices have insufficient room for a large board
 - ⇒ information could be easily capture, stored, retrieved and manipulated
 - ⇒ space will have a personal PC

Hawkeye Concept 2 would provide a simple and inexpensive solution for individual/cubicle use. It could capture notes in a defined area and allow the retrieval and editing of these notes at a later date. A fixed-lens camera could be produced (or purchased) very economically and would not require a great deal of space to use. The Hawkeye system could be directly connected to the individual's PC.

Multiple cameras could be used in larger meeting rooms or classrooms. This would enable the user to capture information from a larger area by taking multiple images and, if desired, stitching them together into a single image by utilizing the Xerox mosaicing software. Ideally, this imaging system could be used with a variety of boards as the imaging technology could capture images created using regular ink, whiteboard markers, chalk or other writing tools. *Hawkeye Concept 1* would be focused on fulfilling these needs.

There is also a high demand for copyboard products that can quickly produce a hardcopy of an image. A simple, stand-alone product that includes a small processing device (or embedded PC) and printer can be made that will have higher image quality than standard copyboards because of the camera image (*Hawkeye Concept 3*). The product would not require a dedicated PC and could, ideally, be connected to a variety of printers. Concept 1 and 2 could be connected to a printer and may be more economical options than the SMART Copyboard product. For the remainder of this Product Proposal, only Concepts 1 and 2 will be considered.